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PTO/SB/21 (04-04)

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FORM**

(to be used for all correspondence after initial filing)

<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)	Application Number	10/035,494
	Filing Date	November 8, 2001
	First Named Inventor	Dawes et al
	Art Unit	2633
	Examiner Name	Dalzid Singh
Total Number of Pages in This Submission	Attorney Docket Number	2676-000011

**ENCLOSURES (check all that apply)**

<input checked="" type="checkbox"/> Fee Transmittal Form  <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment / Reply  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Response to Missing Parts/ Incomplete Application  <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert to a Provisional Application  <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Technology Center (TC)  <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences  <input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)  <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <b>Return Postcard</b>
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**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name	Timothy D. MacIntyre	Reg. No.	42824
Signature					
Date	March 9, 2006				

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
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Signature		Date	March 9, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

## FEE TRANSMITTAL for FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

<b>TOTAL AMOUNT OF PAYMENT</b>	(\$ ) 500
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**Complete if Known**

Application Number	10/035,494
Filing Date	11/08/01
First Named Inventor	Dawes et al
Examiner Name	Dalzid Singh
Art Unit	2633
Attorney Docket No.	2676-000011

**METHOD OF PAYMENT** (check all that apply)

☒ Check   ☐ Credit Card   ☐ Money Order   ☐ None   ☐ Other (please identify) : \_\_\_\_\_

☒ Deposit Account   Deposit Account Number: 08-0750   Deposit Account Name: Harness, Dickey & Pierce, PLC

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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☒ Charge any additional fee(s) or underpayments of fee(s)   ☒ Credit any overpayments

Under 37 CFR 1.16 and 1.17

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**FEE CALCULATION**

**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

**2. EXCESS CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

**Total Claims**   **Extra Claims**   **Fee (\$)**   **Fee Paid (\$)**

\_\_\_\_\_ -20 or HP= 0 x \_\_\_\_\_ = 0

HP = highest number of total claims paid for, if greater than 20.

**Indep. Claims**   **Extra Claims**   **Fee (\$)**   **Fee Paid (\$)**

\_\_\_\_\_ - 3 or HP= 0 x \_\_\_\_\_ = 0

HP = highest number of independent claims paid for, if greater than 3.

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____	= 0	/ 50 = 0 (round up to a whole number) x		= 0

**4. OTHER FEE(S)**

	Fees Paid (\$)
Non-English Specification, \$130 fee (no small entity discount)	_____
Other (e.g., late filing surcharge) : Appeal Brief	500.00

**SUBMITTED BY**

Signature		Registration No. (Attorney/Agent)	42824	Telephone	248-641-0230
Name (Print/Type)	Timothy D. MacIntyre	Date	March 9, 2006		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Group Art Unit:	2633	)	
Examiner:	Dalzid E. Singh	)	
Applicants:	Dawes et al	)	Appeal Brief
Serial No.:	10/035,494	)	
Filed:	11/08/01	)	
Title:	Optical Media Management Channel	)	

BRIEF ON BEHALF OF APPELLANTS

This is an appeal from the action of the Examiner dated August 9, 2005, finally rejecting Claims 1-3, 5-12, 14-16 and 18 of the present application. Copies of the appealed claims are attached as an appendix.

I. Real Party In Interest

The real party in interest in the present application is PTS Corporation who is the current assignee of the application.

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## **II. Related Appeals and Interferences**

There are no known related appeals or interferences which will directly affect, be directly affected by, or otherwise have a bearing on the Board's decision in the pending appeal.

## **III. Status Of The Claims**

Claims 1-3, 5-12, 14-16 and 18 are pending in the present application. Claims 4, 13 and 17 were previously cancelled from the application.

## **IV. Status Of Amendments**

In accordance with the Advisory Action mailed on January 11, 2006, Applicant's proposed claim amendments were not entered at this time. Therefore, Claims 1-3, 5-12, 14-16 and 18 stand as amended by the applicant's response filed on April 26, 2005 and presented in the attached appendix.

## **V. Summary of the Claimed Subject Matter**

In dense wavelength division multiplexing (DWDM) optical networks, managing the physical media by tracing signal paths is considered a very challenging task. Since the optical signals are analog signals, confirming connectivity and continuity is difficult without converting them to electrical signals. The problem is exacerbated when complex network elements such as all-optical switches, dynamically re-configurable optical add-drop multiplexers (OADM) etc. are added to the optical network. Optical networks currently do not have a *complete* data communication infrastructure that will support in-fibre signalling between all of the network elements.

Applicant's invention is directed generally to a network management communication infrastructure that will support in-fiber signaling between all of the network components residing in the optical network. For instance, Claim 1 recites a network element residing in an optical transport network. The network element includes an optical transport line operable to carry an optical system signal therein and a demultiplexing component operable to receive the optical system signal from the optical transport line. Moreover, each of the optical fibers associated with the demultiplexing component is operable to carry an optical management signal and an optical data signal, where the optical management signal is transmitted at a wavelength different than the wavelength range used to transmit the optical data signal. Independent Claims 9 and 14 recite similar subject matter. Basis for this subject matter may be found throughout the application as originally filed, including pages 5 and 6 of the specification.

## **VI. Grounds of Rejection to be Reviewed on Appeal**

- I. Whether Claims 1-3, 5-12, 14-16 and 18 are unpatentable over U.S. Patent No. 6,661,973 (Huber) in view of U.S. Patent No. 6,433,903 (Barry) under 35 U.S.C. §103(a)?

## **VII. Arguments**

- I. Rejection of Claims 1-3, 5-12, 14-16 and 18 as being unpatentable over Huber in view of Barry.

Huber is directed generally to optical wavelength division multiplexed systems. Of interest, Huber discloses introducing a local oscillator wavelength into an optical signal before it reaches an optical receiver 14. It is readily understood in the art that the local oscillator wavelength is intended to maximize the local oscillator power available for coherent detection of the optical signal. In fact, Huber further teaches that the local oscillator wavelength may be alternatively introduced at other locations, such as the transmitter 12 or along the fiber 15, of the optical system (see col. 5, lines 31-35). Thus, Huber teaches that the local optical source need not be interposed between the demultiplexer 20 and the receivers 14n. Moreover, the local optical source 16 does not nor is it intended to introduce an in-fiber management signal within a network element as recited in Applicant's claimed invention.

The Examiner then relies on Barry to teach introducing an in-fiber management signal along each fiber within a network element. However, Barry merely teaches that it is well known for optical systems to use optical management signals. In Barry, an optical

management signal is sent between different network elements and amongst different management domains. For instance, Figures 5-12 of Barry illustrate how an optical management signal is coupled to an optical link. It is important to note that an in-fiber optical management signal is not provided for each fiber interfacing with the multiplexer or demultiplexer. In other words, Barry fails to teach or suggest introducing in-fiber management signals along each fiber within a network element as recited in Applicant claimed invention. Absent this fundamental teaching, the Examiner appears to be using hindsight reasoning in view of Applicant's claimed invention to construct the current rejection.

Since neither Huber nor Barry teach introducing an in-fiber management signal along each fiber within a network element, applicant asserts that this combination of references fails to achieve Applicant's claimed invention. To the extent the Examiner relies upon the knowledge of one of ordinary skill for this teaching and/or motivation to combine these references, Applicant contends that it was only known to introduce in-fiber optical management signals on the links between network elements, not within network elements. Only upon the introduction of optical switching at different hierarchical layers within a network elements did a need arise for a comprehensive network management infrastructure within each network element as proposed by Applicant's claimed invention.

Therefore, it is respectfully submitted that Claim 1, along with claims depending therefrom, defines patentable subject matter over this combination of references. Applicant notes that independent Claims 9 and 14 recite similar subject matter, and thus should be allowable, along with claims depending therefrom, for the same reasons as

Claim 1. Accordingly, Applicant respectfully requests the Board to reconsideration and withdrawal of this rejection.

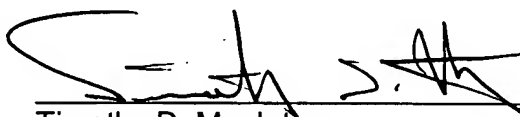
II. Rejection of Claims 5 and 18 as being unpatentable over Huber in view of Barry.

In Applicant's invention, an optical management signal 52 may be transmitted over the optical fiber even in the absence of an optical data signal. This is important for enabling testing of the entire network infrastructure before payload data is introduced into the network. In Huber, the local oscillator signals are only needed when the optical signal wavelengths  $\lambda_i$  (i.e., payload data) are present in the network. In other words, the local optical source is not operable in the absence of an optical data signal in the accompanying fiber. For this additional reason, Applicant respectfully requests the Board to reconsideration and withdrawal of the pending rejection in relation to these two claims.



For the foregoing reasons, the appealed claims are patentably distinguishable over the art relied upon by the Examiner. Accordingly, Applicant's representative respectfully requests that this Board reverse the final rejection of Claims 1-3, 5-12, 14-16 and 18.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Timothy D. MacIntyre', is written over a horizontal line.

Timothy D. MacIntyre  
Registration No. 42,824

Dated: February 28, 2006

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TDM/drl

## **Claims Appendix**

1. (previously presented) A network element residing in an optical transport network, comprising:

an optical transport line terminating at the network element, the optical transport line operable to carry an optical system signal therein;

a demultiplexing component connected to the optical transport line, the demultiplexing component operable to receive the optical system signal and separate the optical system signal into a plurality of intermediate optical signals; and

a plurality of optical fibers connected to the demultiplexing component, each of the optical fibers operable to carry an optical management signal and one of the plurality of intermediate optical signals therein, the optical management signal being transmitted at a wavelength different than the wavelength range used to transmit the intermediate optical signal.

2. (original) The network element of Claim 1 wherein the optical management signal is transmitted at a wavelength that is spectrally separated from the transmission wavelength range for the plurality of intermediate optical signals.

3. (original) The network element of Claim 2 wherein the plurality of intermediate optical signals are transmitted at a wavelength in the range of 1520nm to 1610nm and each of the optical management signals are transmitted at substantially 1310nm.

5. (original) The network element of Claim 1 wherein the optical management signal is transmitted in the absence of the intermediate optical signal.

6. (original) The network element of Claim 1 further comprising a plurality of management signal sources interposed between the demultiplexing component and the plurality of optical fibers, where each of the management signal sources is operable to introduce an optical management signal into a corresponding optical fiber.

7. (original) The network element of Claim 6 wherein at least one of the management signal sources includes a laser source operable to generate an optical management signal, and a signal combiner operable to combine the optical management signal from the laser source with the intermediate optical signal traversing through the corresponding optical fiber.

8. (original) The network element of Claim 1 further comprising a plurality of management signal receivers connected to the plurality of optical fibers, each of the management signal receivers operable to receive and separate the optical management signal from the intermediate optical signal traversing through the corresponding optical fiber.

9. (previously presented) A method for managing an optical transport network, comprising:

terminating an optical transport line at a network element residing in the optical transport network, the optical transport line operable to carry an optical system signal and the optical system signal having a plurality of optical data signals embodied therein;

routing the plurality of optical data signals amongst a plurality of optical fibers associated with the network element; and

defining an optical management channel for each of the plurality of optical fibers, the optical management channel operable to carry an optical management signal therein.

10. (original) The method of Claim 9 further comprising the step of transmitting a first optical management signal over at least one of the optical management channels, the first optical management signal transmitted at a wavelength different than the wavelength range used to transmit an optical data signal through the corresponding optical fiber.

11. (original) The method of Claim 10 wherein the step of transmitting a first optical management signal further comprises selecting a wavelength that is spectrally separated from the wavelength range used to transmit the optical data signal.

12. (original) The method of Claim 11 wherein the first optical management signal is transmitted at substantially 1310nm and the optical data signal is transmitted at

a wavelength in the range of 1520nm to 1610nm.

14. (previously presented) An optical transport network, comprising:
- a plurality of network elements residing in the optical transport network;
  - a plurality of optical transport lines interconnecting the plurality of network elements, each optical transport line operable to carry an optical system signal and the optical system signal having a plurality of optical data signals embodied therein; and

- a plurality of optical fibers associated with each network element, each of the optical fibers operable to carry one or more optical data signals and an optical management signal therein, the optical management signal being transmitted at a wavelength different than the wavelength range used to transmit the optical data signals through the corresponding optical fiber.

15. (original) The optical transport network of Claim 14 wherein the optical management signal is transmitted at a wavelength that is spectrally separated from the wavelength range used to transmit the optical data signals.

16. (original) The optical transport network of Claim 15 wherein optical management signal is transmitted at substantially 1310nm and the optical data signals are transmitted at a wavelength in the range of 1520nm to 1610nm.

18. (original) The optical transport network of Claim 14 wherein the optical management signal is transmitted in the absence of the optical data signals.

**Evidence Appendix**

None

**Related Proceedings Appendix**

None